Monitors

ProLinear 820 DSP Professional 120 Watt, 2 Way Active DSP Studio Monitors

ProLinear 820 DSP Specifications

Input:
Nominal input level: +4dBu (-15dBFS). Maximum input level: +20dBu (7.0 Vrms)
Input impedance: 10kΩ

Output:
Sound Pressure Level (SPL): ~113db at 1 meter at max input below clipping.
Low Frequency (LF) power: 80 watts RMS, ~120 watts peak.
High Frequency (HF) power: 40 watts RMS typical, ~120 watts peak. Frequency response: 50hz – 20kHz +/- 1.5dB. Bass level -3dB @ 39hz typical,
Signal To Noise ratio: > 90 dB A-weighted, Analog In to Analog Out,

Power Requirements:
Input voltage: 100v – 230v

ProLinear 820 DSP - State of the Art Sound at an Affordable Price

The Alesis ProLinear 820 DSP continues the new standard in near-field monitors that was set by the ProLinear 720 DSP. With the same Alesis' custom DSP technology, we have designed a speaker with same sound quality and accuracy but with extended bass and greater output. This allows the speaker to be used as a mid-field monitor as well as near-field. As with the 720 DSP, the internal processing allows user flexibility to configure the speaker for almost any application via the front panel control or the included graphical PC application software.

ProLinear 820 DSP Features

It Begins with the Drivers

Any great speaker design starts with the best drivers and the Alesis' custom drivers are exceptional. The woofer has a cast frame with an 8" Kevlar-Carbon cone and oversized magnet assembly. The Kevlar-Carbon cone has outstanding stiffness to weight ratio to minimize distortion, extend bass response and provide excellent transient response. The magnet assembly provides high linearity and good efficiency. In the 820 DSP cabinet, the woofer is flat down to 39hz (-3db, anechoically) with harmonic distortion typically below .4% above 50hz.

Power consumption: 20 W (idle)
130 W (typical, at maximum volume)

Environmental Requirements:
Temperature range: 0-40 degrees C. Relative humidity (non-condensing): 30-85%.

Cabling Requirements:
Mixer to Speaker: Balanced or unbalanced, shielded; XLR or ¼" TRS connector.
Speaker to PC: Standard 9-pin, RS-232 serial cable (male-female).
Speaker to Speaker: Standard 9-pin, RS-232 serial cable (male-female).

Mechanicals:
Size (HxWxD): 17" x 11" x 13.5" (440mm x 280mm x 345mm)
Weight: 32lbs (14.6kg)

Disclaimer:
The features and specifications of the Alesis ProLinear Monitors are subject to change at any time without notice.

The tweeter is a 28mm silk dome that has a very flat frequency response with a low resonance to reduce harshness. The tweeter is ferro-fluid cooled to provide good power handling and well-behaved response. Distortion is typically below 0.3% over its operating range. The tweeters computer designed waveguide was optimized for nearfield placement but provides excellent imaging in most other placements.

Both drivers are shielded and allow the user to place the speakers within a few inches of a CRT.

The Cabinet

Since the 820 DSP cabinet is larger than the 720 DSP, heavy bracing was included to minimize any cabinet resonances. In addition, a coating of bitumen was applied to the inner walls to further deaden the cabinet. Venting was optimized to eliminate most of the vent noise or "chuffing" that can occur at low bass frequencies.

Why Use DSP?

1. The Crossover
With Alesis' custom DSP processing, the crossover for the drivers achieves a linearity that is usually unachievable in analog monitors. This allows a smooth transition of the sound between the tweeter and woofer as well as providing proper time domain coherency. In other words, the speaker is as accurate as the drivers. The DSP also allows us to smooth out the frequency response far more effectively than with analog monitors. The response is typically better than +/- 1dB between 100hz and 20Khz.

2. Speaker Emulation and Modeling using the Programmable EQ
There are 4 programmable, user controlled, fully parametric equalizer bands to adjust the speaker to a desired response. The speaker has 16 stored programs (8 PRESETS and 8 pre-defined USER variable settings) as described by the following table:

PRESET	USER
1. Flat	1. Warmth
2. Hi-Fi (Smile)	2. Bass Boost
3. White Cone	3. Bass Cut
4. Faux Finnish	4. Treble Boost
5. Studio Cube	5. Treble Cut
6. Boom Box	6. AM Radio
7. BBC Dip	7. Narrow
8. 80 Hz High Pass	8. Portable Radio

Any of these settings can be varied, but only the USER settings can be overwritten.

3. Level Adjustment
One cool feature of the Prolinear DSP is the level adjustment, which allows the user to calibrate the input level to match other speakers. Simply invoke it by pushing a couple of the front panel buttons and the liquid crystal display (LCD) will display the input level into the speaker. To calibrate the speaker, input a constant test signal (e.g. pink noise, white noise) and adjust the rear panel pot to the desired level.

4. Connectivity
The internal processing of the ProLinear DSP provides external RS-232 serial ports that allow the user to connect the speaker to a PC or other speaker in a daisy chain (with the included serial cables). The functions

that can be controlled through the serial port include setting of the 4 parametric bands, level control and selection of the 16 stored programs. Via a single PC, any number of speakers may be controlled. Each speaker has a channel ID number (from 1 to 16). Any speaker with the same ID will be controlled at the same time. This means that you can have 16 speakers addressed individually, or an unlimited number controlled the same.

The Electronics

The ProLinear is bi-amplified with typically 80 watts for the woofer and 40 watts for the tweeter. (In actuality, the woofer and tweeter are both powered at 80 watts, but because of the higher efficiency and lower power content to the tweeter, only about 40 watts is needed to match the 80 watts to the woofer.) The amplifiers are low distortion, wide band devices that are self-protected to prevent damage to the drivers. Inputs are either analog XLR or ¼" TRS, so digital mixers and sources are not required. The power supply is a high efficiency switching supply used to provide optimal power at a low weight, as well as being usable over a wide range of AC voltages without reconfiguring the speaker.

The front panel/display of the speaker allows the user to control all the functions of the speaker if a PC is not available. Multiple speakers can also be controlled from a single speaker. The LCD provides a readout of all parameters and flashes red to indicate that the speaker is being overdriven.

Conclusion for the ProLinear 820DSP

In keeping with the Alesis track record of providing leading edge products at an affordable price, the ProLinear 820DSP gives the user a speaker that is state of the art in performance and features and the look and feel are similar to other Alesis monitors. The ProLinear series of speakers extends the Alesis line of award winning monitors and will be a worthy addition to the best studio setups.

Contact Alesis

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